



Motorola Inc
c/o Boulton Wade Tennant
Verculam Gardens
70 Gray's Inn Road
LONDON
WC1X 8BT

The Patent Office
Patents Directorate

Concept House
Cardiff Road, Newport
South Wales, NP10 8QQ

Examiner: 01633 813769
E-Mail: john.betts@patent.gov.uk
Switchboard: 01633 814000
Fax: 01633 814444
Minicom: 08459 222250
DX: 722540/41 Cleppa Park 3
<http://www.patent.gov.uk>

MOT
etc 21106
OK 17/10/05

Copy in Records.

Your Reference: CS11457.SG.GB.RIORDAN
Application No: GB0415758.2 P 7534 86800

17 June 2005

Dear Sirs

Patents Act 1977: Examination Report under Section 18(3)

Latest date for reply: 17 October 2005

I enclose two copies of my examination report and a copy of the new citation.

By the above date you should either file amendments to meet the objections in the enclosed report or make observations on them. If you do not, the application may be refused.

Yours faithfully

John Betts
Examiner

RECEIVED

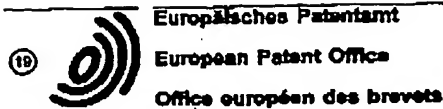
20 JUN 2005

BOULT WADE
TENNANT

BEST AVAILABLE COPY

*Use of E-mail: Please note that e-mail should be used for correspondence only.

An Executive Agency of the Department of Trade and Industry



(11) Publication number: **0 635 965 A1**

(12)

EUROPEAN PATENT APPLICATION

(21) Application number: 84305354.6

(61) Int. Cl.⁸: H04N 1/00, G03G 15/00

(22) Date of filing: 20.07.94

(30) Priority: 23.07.93 US 94949

(43) Date of publication of application:
25.01.95 Bulletin 95/04

(84) Designated Contracting States:
DE FR GB

(71) Applicant: XEROX CORPORATION
Xerox Square
Rochester New York 14644 (US)

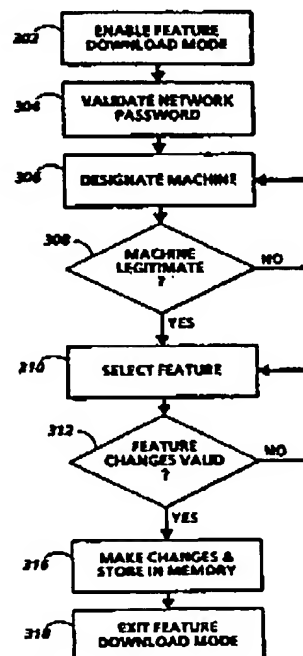
(72) Inventor: Hube, Randall R.
15 Cardogan Square
Rochester, New York 14625 (JP)
Inventor: Cardinale, Louis J.
951 Schoemaker Lane
Webster, New York 14580 (JP)
Inventor: Auclair, Christopher J.
23 Hunters Drive N.
Fairport, New York 14450 (JP)
Inventor: Thomas, Theodore W.
5335 Marian Drive NE
Olympia, Washington 98516 (JP)

(74) Representative: Reynolds, Julian David et al
Rank Xerox Ltd
Patent Department
Parkway
Marlow Buckinghamshire SL7 1YL (GB)

(54) Enabling features over a common communication channel.

(57) A technique for downloading or activating or deactivating selected machine features (Figs 3-8) from a remote central station (157) that is connected to the remote machine (30) by a communication channel (175). Also, the invention includes identifying (Fig.9) features to be downloaded and then activated at a given site and communicating the data relative to the identified features to the remote machine.

FIG. 9



EP 0 635 965 A1

Jouve, 18, rue Saint-Denis, 75001 PARIS

1

EP 0 635 965 A1

2

The invention relates to a system for the selective enablement of machine features and more particularly, to the selective enablement of machine features from a remote station over a common communication channel.

A significant consideration in the use of an imaging machine is that some features of the machine may not be appropriate to every location or machine environment. In addition operator experience and the mix of job requirements may or may not preclude the use of selected machine features. Yet, it is impractical to tailor a machine configuration specifically for each distinct machine location. As a result, a machine generally is designed or embedded with a multitude of features that may or may not be applicable at certain locations. For example, features such as Document Editing, Set Addressing, Poster Enlargement, Irregular Enlargement, Auto Center, Mirror Image, Free-hand editing, Merge Image, User Registered Colors, Bi-directional image shift, Book Copying or even Expanded Finishing capability may not always be required by the customer. For customer relations, it is preferable, to charge a customer only for features that are applicable to the specific customer requirements. Yet, the machine often already possesses these features or such features may be requested at a later date.

To overcome the above identified difficulties, it would be desirable to provide a more flexible and adaptable machine. In particular, a more flexible and adaptable machine that selectively provides features commensurate with specific locations and customer requirements.

It is known in the prior art for screen dialogues related to features embedded in a machine to be selectively installed in the machine from a portable memory device to enable the features for operator use. An operator loads the portable memory device into the machine for reading by the machine control and a special dialog frame on the interface screen is displayed prompting the operator to confirm the installation of selected screen dialogues. The selected screen dialogues are automatically set in the control NVM to establish the selected screen dialog within the machine. It is also known to be able to enable various software packages in a machine control by making appropriate entries in non volatile memory.

The difficulty with the prior art, however, is the required intervention of an operator or service representative to load and install the feature and to make the appropriate changes in the non volatile memory to reconfigure the machine. This also requires handling a portable memory and decisions and actions at the machine site that may be incorrect or inappropriate for the specific location. In addition, if the machine does not already contain a given software feature, the feature must be first pre-loaded into the machine control before it can be enabled or made avail-

able to the operator. This usually requires the service of a tech rep and further complicates configuring a machine. It would be desirable, therefore, to eliminate a costly call by a service representative or the reliance on a machine operator to enable or dis-enable selected machine functions, let alone to retro fit the feature into the machine for the first time.

US-A-4,658,093 to Hellman discloses a software distribution system wherein software can be authorized for use solely by a particular base unit and for only a specific number of times. A manufacturer of base units and software generates a random key and stores it in a base unit which is sold to a user. When wishing to use a certain software package, the user's base unit generates a random number and communicates it to the manufacturer of the software. The software manufacturer generates an authenticator which is a cryptographic function of the base unit's key, the software, the number of times use of the software is authorized, and the random number generated by the base unit. The user's base unit then uses the same cryptographic function to generate a check value of the key, the software, the number of times use is authorized, and the random number which the base unit generated. If the check value and the authenticator agree, the base unit accepts the authenticator as valid and increments the number of times of use for which the software is authorized.

It is an object of the present invention, therefore, to provide a new and improved technique to simply and quickly adapt the features of a machine to the requirements of a predetermined location without operator or service representative on site presence. It is still another object of the present invention to selectively change the features of a machine by remote designation or feature downloading from a central control station over a common communication channel.

The present invention provides in an imaging system for producing images on image supporting substrates, the system including a machine having a plurality of operating components and a central station remote from the machine, the machine and the central station being interconnected by a communication channel, the machine having a plurality of predetermined activated features, a technique for enabling an additional feature different from said activated features including the steps of: identifying the machine at the central station for having said additional feature enabled; communicating with the machine over the communication channel interconnecting the machine and the central station; responding at the machine that said additional feature is a valid feature for said machine; enabling from the central station said additional feature for the machine, said additional feature becoming an activated feature; and recording in memory the activation of said additional feature.

The invention further provides an imaging ma-

2

3

EP 0 635 985 A1

4

chine having a plurality of operating components and predetermined activated features for producing images on image supporting substrates, an interface for communicating with a remote central station, the machine and the central station being interconnected by a communication channel, the interface including means for enabling an additional feature different from said activated features, said means for enabling being activated by the central station by way of the communication channel.

The invention further provides a method for enabling a feature, according to claim 4, 8, 9 or 10 of the appended claims.

The method of claim 13 including the step of sequentially displaying feature options and select buttons.

The method preferably includes the step of de-selecting displayed features, the step of downloading diagnostic routines from the central station to the machine, and/or the step of downloading service procedures.

Briefly, the present invention is concerned with downloading or activating or deactivating selected machine features from a remote central station that is connected to the remote machine by a communication channel. Also, the invention includes identifying features to be downloaded and then activated at a given site and communicating the data relative to the identified features to the remote machine.

For a better understanding of the present invention, reference may be had to the accompanying drawings wherein the same reference numerals have been applied to like parts and wherein:

Figure 1 is a schematic elevational view depicting various operating components and subsystems of a typical machine incorporating the present invention.

Figure 2 is a general block diagram of the remote communication system incorporating the present invention;

Figures 3 - 5 are front views of the touch monitor screen of the machine of Figure 1 the machine depicting touch selection icons;

Figures 6 - 8 are front views of the touch monitor screen of the remote station of figure 2 depicting the remote transfer or enablement of selected machine features from a central station to a remote machine in accordance with the present invention; and

Figure 9 is a flow chart depicting the remote transfer or enablement of selected machine features from a central station to a remote machine in accordance with the present invention. In the drawings, like reference numerals have been used throughout to identify identical elements.

FIG. 1 shows one example of the overall construction of a color copying machine to which this invention is applied. The color copying machine is well

known in the art, and a detailed description has therefore been omitted from the present disclosure. For further information on the construction of the machine, reference is made to U.S. application serial No. 08/094,949, a copy of which was filed with the present application. For further details of the control of the machine illustrated in Figure 1, reference is made to US-A-5,032,903.

With reference to Figure 2, there is shown a remote communication system including remote host 157 interconnected to Control 71 of machine 30 through a suitable channel such as telephone line 175 or such as local and wide area networks, cellular phone channels, infrared links, and serial channels such as RS232 and SCSI. Selected machine features as will be described below are downloaded or, if already resident in the Control 71 of machine 30, are enabled by communicating with a suitable memory or storage, such as features file 194 within Control 71. It should be noted that the scope of the invention is intended to cover any suitable method to reconfigure machine 30. The reconfiguration can be initiated remotely from site 157 by downloading features to be stored in memory and setting appropriate flags, such as in NVM 167, to designate features. An alternate embodiment provides that the machine 30 operator logs into the remote (central) host, determines options or features that can be loaded, and selects those options or features to be downloaded. In this scenario, the remote host would likely be 'unmanned' and would merely update its billing and configuration databases to reflect the change on machine 30.

A communication modem 182 is provided for machine 30 at the machine site, modem 182 serving to connect line 175 to machine 30 for transmittal of the machine physical data from machine 30 to the remote host 157 and reconfiguration data from remote host 157 to machine 30. A computer such as PC 159 with suitable input such as keyboard 180 is provided at the remote host 157 for use in establishing communication with modem 182 for transmission of data from machine 30 via line 175 to host 157 and from 157 to machine 30. A suitable data bandwidth converter 184 converts data to the clock rate required for transmission over line 175, it being understood that the rate at which data is handled by machine 30 is ordinarily different and typically substantially greater than the data transmission rate of telephone line 175. In this regard a clock 185 is connected to converter 184. The clock 185 is used to determine frequency of testing the state of the machine, for possible transfer of an alert.

FIG. 3 illustrates the basic user interface screen of machine 30 while FIG. 4 shows an example of the pop-up screens put on display on the basic copying screen, and FIG. 6 shows by way of example the screen for Paint 1 for the creative editing process. The basic copying mode screen which is used for setting

3

5

EP 0 635 965 A1

6

the copying modes, is put on display as the initial menu screen. The screen for setting the copying modes forms a "soft" control panel, which is a screen divided into two parts, i. e. between the message area A and the pathway B, as shown in FIG. 3. These screens illustrate the basic frames or displays of currently available options or features for an operator to run a job requirement.

The message area A occupies the area equivalent to three lines in the uppermost area on the screen, the first line being used for the state message and the second line and the third line forming an area for use for guiding messages in case there is any contradiction in the selection of the functions, for use for messages concerning any abnormal state of the equipment, and for use for messages representing warning information, and the prescribed messages are put on display in this area. Moreover, the right-hand margin of the message area A is assigned to the area for indicating the number of sheets, and here the set number of sheets to be copied as input with the ten keys and the number of copies being produced are indicated.

The pathway B constitutes the area where selection is to be made of various kinds of functions, and it has the pathways of basic copying, editing features, marker editing, business editing, free-hand editing, creative editing, and tools, and, in correspondence to each of these individual pathways, the pathway tabs C are put on display. Additionally, each of the pathways is provided with pop-up menus for improving the operating ease and efficiency. In the pathway B, the system puts on display the "soft" button D, which forms a list of branched choices, with which selection is to be made of the functions by touching on the appropriate button, the icon E (picture), which changes, depending on the selected function, and represents the specific function, the indicator F, which indicates the reduction/enlargement ratio, and so forth. Those functions which are shown on the pop-up menus by operations on the "soft" buttons are indicated by the pop-up mark G (triangle mark). And, by touching on the pathway tab C, the pathway can be opened, and the functions of the particular pathway can be selected by touching on the soft button. The selection of functions by touches on the soft buttons is so designed in consideration of its operating efficiency that the operation are to be performed from the upper left part of the screen towards the lower right-hand side thereof in regular steps.

As mentioned, the display system features the division between the basic copying screen and the rest of the screens in order to provide the maximum compatibility with the other models of equipment and the maximum compatibility with the hardware console panel, and the editing screen, moreover, is designed to have a hierarchical structure composed of a plural number of levels so as to offer screens and functions

in a manner suitable for the operator's skill level. Furthermore, this system offers a set of screens enabling the operator to use the functions with ease in a highly variegated way with the advantage of the pop-up representation of high-level functions and complicated functions among those presented on a given single screen through the combination of the screen composition as described so far and the pop-up functions.

The pop-ups contain detailed information for the setting of particular functions, and the composition for the screen for each pathway is made easy to observe and simple by providing the pop-up opening function and by having the detailed function-setting information as required from time to time. The pop-up menu is opened when a soft button with a pop-up mark thereon is touched. And, the pop-up menu is closed, for instance, when a close button or a cancel button is selected, or when the "all-clear" button is selected, or when the "all-clear" button is pushed, or when the "all-clear" operation is put into action by the auto-clear function. It is FIG 4 that shows the appearance of the screen where a pop-up is opened by a touch on the soft button for variable magnification in the reduction/enlargement function.

The pathway for the basic copying function is provided with soft buttons (i.e. branched choices) for the selection of the individual functions for the color mode, paper selection, reduction and enlargement, copy quality, color balance, and job program, as illustrated in FIG. 3 and is also provided with the individual pathway tabs for marker editing, business editing, free-hand editing, and creative editing, as well as aided features and tools. These pathways are the initial-phase pathways, which are put on display, for example, after the power-on operation or after turning on the all-clear button, or when the auto-clear button is turned on.

The color mode is provided with the branched choices of full-color copying (four path color) for copying in the four kinds of color, Y, M, C, and K, three path color for copying with toners in the three kinds of color excluding K, single-color copying, which offers the choice of one color out of 12 colors, black and black/red, and the default choice, which is selected automatically, is designed to permit its voluntary setting. Here, as the choices for black/red has detailed items to be set, those items are developed on the pop-up menu.

The selection of paper offers the four choices of automatic paper selection (APS), trays 1 and 2, and cassettes 3 and 4, and the APS works when a specific magnification is set for reduction or enlargement, but does not work when the automatic magnification system (AMS) remains set. The default setting is for the APS.

The reduction and enlargement function permits the choices of 100-percent reproduction, the AMS, which is to be used for setting the magnification for

7

EP 0 835 965 A1

8

copying on the basis of the paper size and original sheet size when the paper size is selected, and the voluntarily chosen magnification, and puts the set magnification, the computer magnification, or the automatic setting on display on the indicator in the top area of the equipment. For the variable magnifications, this system permits the setting of magnification by one percent in the range from 50% to 400% as shown in Figure 4 and also permits the setting of the vertical magnification and the horizontal magnification independently of each other (differential magnification). Therefore, the detailed setting items for these are developed on the pop-up menu. Moreover, the default magnification setting is 100 percent.

As mentioned, this reduction and enlargement process is performed by changing the scanning speed for the subsidiary scanning direction (i.e. in the X-axis direction) and through reduction or enlargement in the main scanning direction (i.e. in the Y-axis direction) by a change in the manner of reading the signals out of the line memory for the IPS. The copy quality function offers the choices of the automatic processes by which the system forms density control for original sheets in black and white and performs automatic color balancing for color original sheets and the manual processes by which the system permits the operator to perform density control in seven steps with the pop-up menu, and the IPS performs control over these processes. The color balancing function enables the operator to specify the color to be reduced on the copy out of Y, M, C, B, G, and R by operations with the pop-up menu, and the IPS performs control over the process.

The job programming function offers branched choices that work effectively only while a memory card remains inserted in the slot of the reading device thereof, and, in this mode, it is possible to select the reading of the job data from the memory card, as well as the writing of such data to the memory card, by operations on the pop-up menu. As for the memory card, this system uses, for example, a memory card with the memory capacity of 32 k-bytes, with which the system is capable of performing the programming of all the jobs except for those in the film projector mode.

The pathway for the aided features is provided with soft buttons (i.e. branched choices) for the selection of the individual functions for copy output, copy sharpness, copy contrast, copy position, film projector, page programming, job programming, and binding margins and it is also provided with the pathway tabs for marker editing, business editing, free-hand editing, creative editing, and, in addition, basic copying and tools. The copy output pathway offers the branched choices between the output of the copied paper to the top tray and the output of such paper in the sorting mode. The copy contrast pathway offers the choices of control over copy contrast in seven steps. The copying position function provides the default choice

of the automatic centering function, which positions the center of the copied image in the center of the paper.

The page programming pathway gives access to the branched choices of the covering function, which puts cover on the copies, the inserting function, which inserts white paper or color paper between copies, the color mode, which sets the color mode for each page of the original sheets, the tray selecting function, by which the tray can be selected for each page of the original sheet. In this regard, this item will not be put on display unless the ADF is installed.

The binding margin pathway makes it possible to specify the binding margin by 1 mm in the range from 0 to 30 mm, and the said margin can be set only in one position for one original sheet. The amount of the binding margin is the amount of space from the top edge of the paper to the top edge of the image area, and the main scanning direction is set by shifting operations by means of the line buffer in the IPS and by a lag in the scanning timing of the IIT in the subsidiary scanning direction.

The editing screens are offered through the four pathways, which are marker editing, business editing, free-hand editing, and creative editing. The marker editing pathway and the free-hand editing pathway provide the branched choices of the various individual functions relating to the extraction, deletion, color application (mesh/line/solid), and color change, and further have the pathway tabs for basic copying, aided feature, and tools. The business editing pathway provides the branched choices of the individual functions relating to extraction, deletion, color application (mesh/line/solid), color change, color painting, logogram insertion, and binding margin, and has the pathway tabs for basic copying, aided features, and tools in the same way as the marker editing pathway, etc.

The creative editing pathway offers the branched choices of the individual functions relating to extraction, deletion, color application (mesh/line/solid), color change, color painting, logogram insertion, binding margin, negative-positive reversal, image setting and synthesis, openwork synthesis, painting, mirror image formation, repeating, enlargement and continuous copying, partial shifting, corner/center shifting, manual/automatic variable magnification, color mode, color balance control, continuous page copying, and chromatic synthesis and furthermore has the pathway tabs for basic copying, aided features, and tools as is the case with the marker editing pathway, etc.

Software upgrades in reproduction machines and printers may contain both problem fixes as well as new functionality. In the past, the upgrade process has often been done by on site personnel at a considerable expense and loss of time both to the service personnel as well as the customer. In accordance with the present invention, customers can load the

5

9

EP 0 635 965 A1

10

software from a remote host and have immediate access to all the features that were available on the machine prior to the upgrade. Access to the new upgrade features is enabled through a remote interface communication interface.

Specifically, customers use the remote interface to request downloading of passwords or of codes to the system or remote host. The remote host then enables the new features with the appropriate instructions and data communications over the shared communication line. The order of the process can also be that the enabling of new features through the remote interface communication could be initiated by the customer before the new software is loaded and stored in the specific machine. The new features would then be immediately enabled upon completion of the software upgrade. It should be noted that all passwords and codes could be generated and downloaded from the remote central station.

The enablement of machine features from a remote station is also applicable to new installations of a machine. Since a given machine contains many features, some of which may or may not be applicable to the customer needs, the machine can be installed and the suitable features enabled remotely. As a customer desires to add features or even to delete some existing features, these features can also be enabled from the remote station after a suitable request from the customer. It should be noted that for many features, the specific feature is already resident in the machine software and control. Enablement of the feature may simply mean setting a suitable flag in memory to trigger the availability of the feature, such as the appropriate messages and screen displays to prompt the operator. In other situations, it may be necessary to completely download the appropriate software or control code into the machine including the appropriate software for displays and operator prompts before the feature can be enabled.

It should be noted that upgrades and changes to the features of machine 30 can be provided directly from the machine 30 location. An operator using the machine 30 interface simply logs into the remote host system for a display or listing of options and features available to machine 30. These options or features may already be resident in machine 30 or may have to be downloaded to machine 30. In either case, the operator merely selects the desired options or features and the remote host automatically activates the feature if resident in machine 30 or downloads the feature to machine 30 and then activates the feature. The remote host records the new configuration of machine 30 for purposes such as billing and monitoring. It should also be noted that in addition to features, other information such as diagnostic routines, test routines, and service procedures can be downloaded to a given machine.

The essence of the present invention is that either

predetermined functions are downloaded or data and information to enable the predetermined functions are activated from the remote host for a specified remote machine. This can be initiated at either the machine 30 or the remote host. A typical scenario would be to identify a given machine at the remote host, identify the functions existing on said given machine, and selectively enable or disable specified functions for that given machine.

Figure 6 illustrates the screen 163 display at remote host 157 of functions currently available on machine xx. The window 101 displays functions that are not on machine xx that could be downloaded to machine xx or that are already resident on machine xx and can be enabled. For example as shown in Figure 6, the market edit, freehand edit, and creative edit functions are illustrated. It should be understood that there are many ways to display or list the functions available on a given machine and those that can be downloaded or made available on a given machine and Figure 6 is merely exemplary. For example, the display or listing for selection could be done at machine xx. Having an identified machine xx, the various selected functions could be simply identified by engaging the buttons 106, 108, and 1010 and this information suitably transferred via the telephone line to machine xx.

A typical sequence would be for an operator at the remote station or at machine xx to enter a feature enable mode and enter a particular machine identification number. There would also be required a suitable log on procedure with an appropriate password. It should be understood that there are various methods of secure log on such as a general password to have access to the feature enablement mode. Another method would be to require a unique password for each machine and require a unique log on password for each machine. Once the operator has suitably logged on, has identified a specific machine with a specific ID, a sequence of enablement and disablement steps can be followed. In one embodiment, for the given machine there could be a listing or display of features currently in the machine. This would give the operator a chance to disable any of these given features that are no longer desirable for the specific machine.

Next there could be a display or listing of features that are not currently enable in the machine. This includes a verification that the machine in fact has a capability to run the feature. The operator then selects the features to be either downloaded to the machine or enabled in the machine by suitable selection either through soft buttons or other switches to transmit this information over the communication channel. The necessary software would either be downloaded to the machine and suitably stored in memory or if already resident in memory an appropriate flag would be set in memory, preferably a non-volatile memory

6

11

EP 0 635 865 A1

12

to identify to the machine control that in fact this feature had been enabled. It should be noted that various prompts and messages can be suitably displayed at the central station to prompt the operator for any given machine. In addition, it should be noted that the displays of features available and that can be enabled will vary from machine to machine.

It should be understood that the scope of the invention is intended to encompass the remote enablement of features in predetermined machines using telephone line, dedicated communications channel, or any other manner of remote communication. It should also be understood that there are many various methods of identifying the machines in communication with the central station and listing and identifying existing features and potential features such as any suitable lists, tables, displays including icons and codes to suitably identify a machine an appropriately enable features or disabled features.

Again, with reference to Figure 8, to illustrate one scenario for the practice of the present invention, there is shown screen 163 at site 157 displaying a simplified version of machine functions relating to machine xx such as full color, black, and single color under the color mode column, auto paper size, tray 1, and tray 2 under the paper selection column, and automatic R/E, 100%, and variable R/E under the reduction/enlargement column. These functions represent enabled functions for machine xx or any other selected machine interconnected to site 157. Functions not in machine xx or not enabled are displayed in phantom as illustrated at 101, for example, the marker edit, the business edit, and creative edit functions. It is assumed that these marker, business, freehand, creative edit functions and any other suitable function are either already available in the machine control as operator functions and need only be enabled or are not resident within the machine control 71 and must be downloaded to the machine and then separately enabled.

It should be noted that, in the particular embodiment being described, there are three functions that may or may not be made available. However, it should be understood that the invention extends to any number of functions as well as types of functions that could be selectively be made available to the operator on the user interface screen.

In operation, there is a memory configuration table of flag indicators in the PC 159 to identify which particular features are available and to initiate the display of these particular features on the screen 163 for a particular machine. Assuming that none of the editing features are available as illustrated by the space 101, and that it is desired to install or enable a selected set of these editing features, the PC 159 control provides a pop up window or frame 105 as shown in Figure 7. The pop up frame 105, for illustrative purposes includes only the marker edit function 106, the

freehand edit 108, and the creative edit function 110 and includes the appropriate text message to press button to enable or install the features. These are the features to be conveyed to the features file 194 or any other suitable memory of machine xx. As a particular edit function button is engaged, that particular feature is downloaded and/or enabled in features file 194.

For example, with reference to Figure 8, there is illustrated the sequence of the operator pressing the marker edit button 106 to move the marker edit function 106a to the screen desktop. In effect, the PC 159 control is noting in a configuration table in memory that the marker edit function has been conveyed to machine xx or enabled for machine xx and the machine now includes the marker edit feature. Thus, upon machine start up of machine xx, the marker edit function will be available.

With reference to Figure 9, there illustrated a flowchart of a typical scenario for implementing the present invention. In particular, at block 302 there is shown the step of enabling the feature download mode. As stated above, this could be either to merely enable a feature already installed in a remote machine or may in fact be the downloading of the software to provide the feature in the remote machine control and the subsequent enablement of that feature. To change the features for a machine from the remote site 157, the operator at the remote site must validate a network password as shown at block 304. This could be a blanket password for the operator to have access to any machine on the network or in fact may be a machine specific password to access a specific machine on the network.

At 306, the operator designates a specific machine, and at decision block 308 there is a determination as to whether or not the designated machine is a legitimate machine. That is, is the machine an appropriate machine to have features enable or disabled from the remote site 157. If the machine is not legitimate as illustrated at 308, the operator at the remote site 157 can only continue by designating another machine. If the machine is a legitimate machine, the operator will then select features to be enabled or disabled as shown at 310. It should also be understood that at this time the operator could optionally select whether certain features are already installed in the designated machine and merely to be enabled or select whether or not the feature itself must be downloaded to the machine to be enabled. Also, the operator can disengage or disable features already enabled in machine xx.

At block 312 there is a determination whether or not the feature changes are valid, that is, this could include a determination as to whether or not the configuration of the machine allows or does not allow for designated features. Various other options could also be made available to the operator, such as only mak-

13

EP 0 635 985 A1

14

ing available or displaying features that are in fact compatible with the designated machine so that there is no chance of an operator selecting a non-compatible feature. If the feature changes are not valid or compatible, then the operator must then select new features as shown at 310.

If the feature changes are valid, at 316 the operator makes the changes which are stored in a suitable memory in PC 159 at the remote site 157. These new features will then appear on the list of available features or features already enabled for the designated machine when such machine is designated at a future date. After the changes are made and stored, it is also assumed that the changes are stored in suitable memory in the designated machine such as non-volatile memory to be scanned by the control and implemented during the operation of the machine. Block 318 illustrates existing the feature download mode and the return to any suitable start up frame on screen 183 of PC 159. It should be noted that a similar scenario could be followed for feature changes, initiated by the operator at machine xx.

Claims

1. In an imaging system for producing images on image supporting substrates, the system including a machine having a plurality of operating components and a central station remote from the machine, the machine and the central station being interconnected by a communication channel, the machine having a plurality of predetermined activated features, a method for enabling an additional feature different from said activated features including the steps of
identifying the machine at the central station for having said additional feature enabled,
communicating with the machine over the communication channel interconnecting the machine and the central station,
responding at the machine that said additional feature is a valid feature for said machine,
enabling from the central station said additional feature for the machine, said additional feature becoming an activated feature, and
recording in memory the activation of said additional feature.
2. The method of claim 1, wherein the step of identifying the machine at the central station for having said additional feature enabled includes the step of entering a features enabling mode.
3. An imaging machine having a plurality of operating components and predetermined activated features for producing images on image supporting substrates, an interface for communicating with a remote central station, the machine and the central station being interconnected by a communication channel, the interface including means for enabling an additional feature different from said activated features, said means for enabling being activated by the central station by way of the communication channel.
4. In an imaging machine for producing images on image supporting substrates, the machine having a plurality of operating components, including an operator interface, a central station remote from the machine, the machine and the central station being interconnected by a communication channel, the machine having a plurality of predetermined activated features, a technique for enabling an additional feature different from said activated features at the operator interface including the steps of
identifying at the operator interface said additional feature to be enabled,
communicating with central station over the communication channel interconnecting the machine and the central station,
determining that said additional feature is a valid feature for said machine,
enabling said additional feature for the machine, and
recording in memory the activation of said additional feature.
5. The method of any of the preceding claims, wherein the step of recording in memory the activation of said additional feature includes the steps of recording in the central station memory.
6. The method of any of the preceding claims, wherein the step of recording in memory the activation of said additional feature includes the step of recording in the machine memory, the machine memory preferably being non-volatile memory.
7. The method of any of the preceding claims, wherein the step of communicating with the machine over the communication channel includes the step of logging on the communication channel with a password.
8. In an imaging system for producing images on image supporting substrates, the system including a machine having a plurality of operating components and a central station remote from the machine, the machine and the central station being interconnected by a communication channel and including display interfaces, the machine having a plurality of predetermined activated features, a technique for enabling an additional feature

15

EP 0 635 985 A1

16

ture different from said activated features including the steps of

identifying for a given machine said additional feature to be enabled,

communicating said additional feature 5
over the communication channel interconnecting the machine and the central station,

determining that said additional feature is a valid feature for said machine,

enabling said additional feature for the 10
machine, said additional feature becoming an activated feature, and

recording in memory the activation of said additional feature.

15

9. In an imaging system for producing images on image supporting substrates, the system including a machine having a plurality of operating components and a central station remote from the machine, the machine and the central station being interconnected by a communication channel, the machine having a plurality of predetermined activated features, a method for enabling an additional feature different from said activated features including the steps of

20

logging on the communication channel,

identifying the machine and the additional feature to be enabled,

responding at the machine that said additional feature is a valid feature for said machine, 30

enabling from the central station said additional feature for the machine, said additional feature becoming an activated feature, and

recording in memory the activation of said additional feature.

35

10. In an imaging system for producing images on image supporting substrates, the system including a machine having an interface with display and a central station remote from the machine, the machine and the central station being interconnected by a communication channel, the machine having a plurality of predetermined activated features, a method for changing said activated features including the steps of

40

accessing the central station from the interface,

displaying feature options at the interface,

selecting a given feature option,

responding that said feature option is a 50
valid feature for said machine,

enabling from the central station said additional feature for the machine, said additional feature becoming an activated feature, and

recording in memory the activation of said additional feature.

55

9

EP 0 635 965 A1

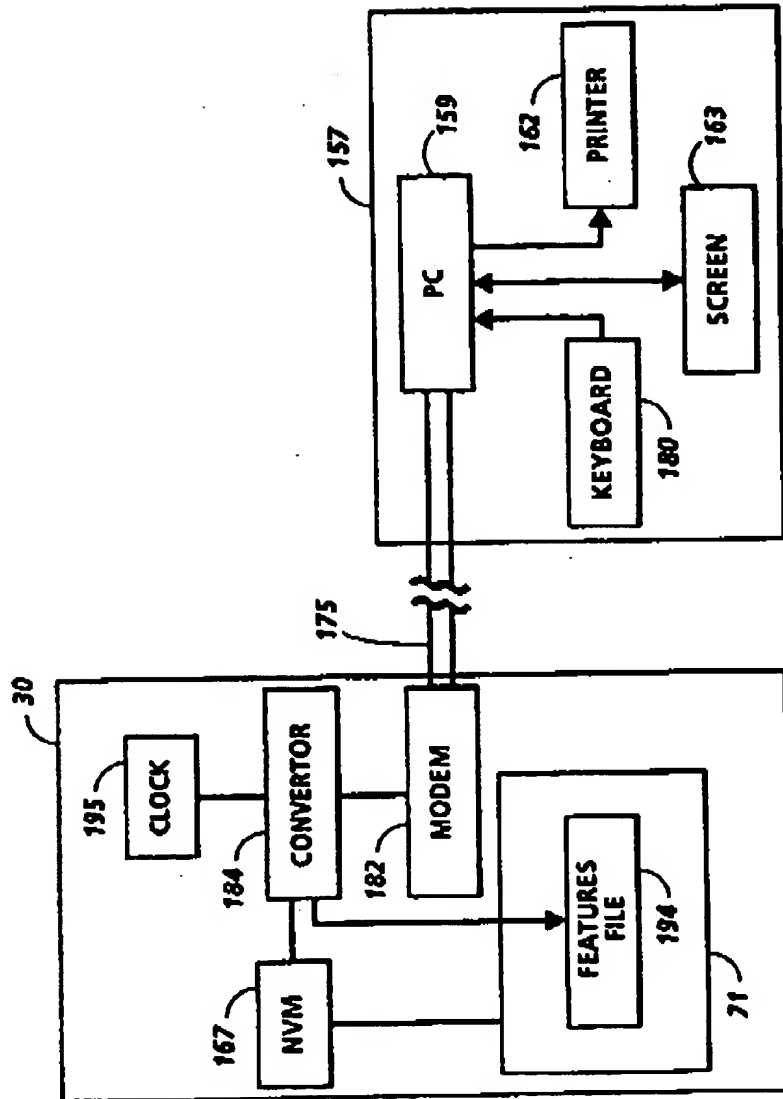


FIG. 2

EP 0 635 965 A1

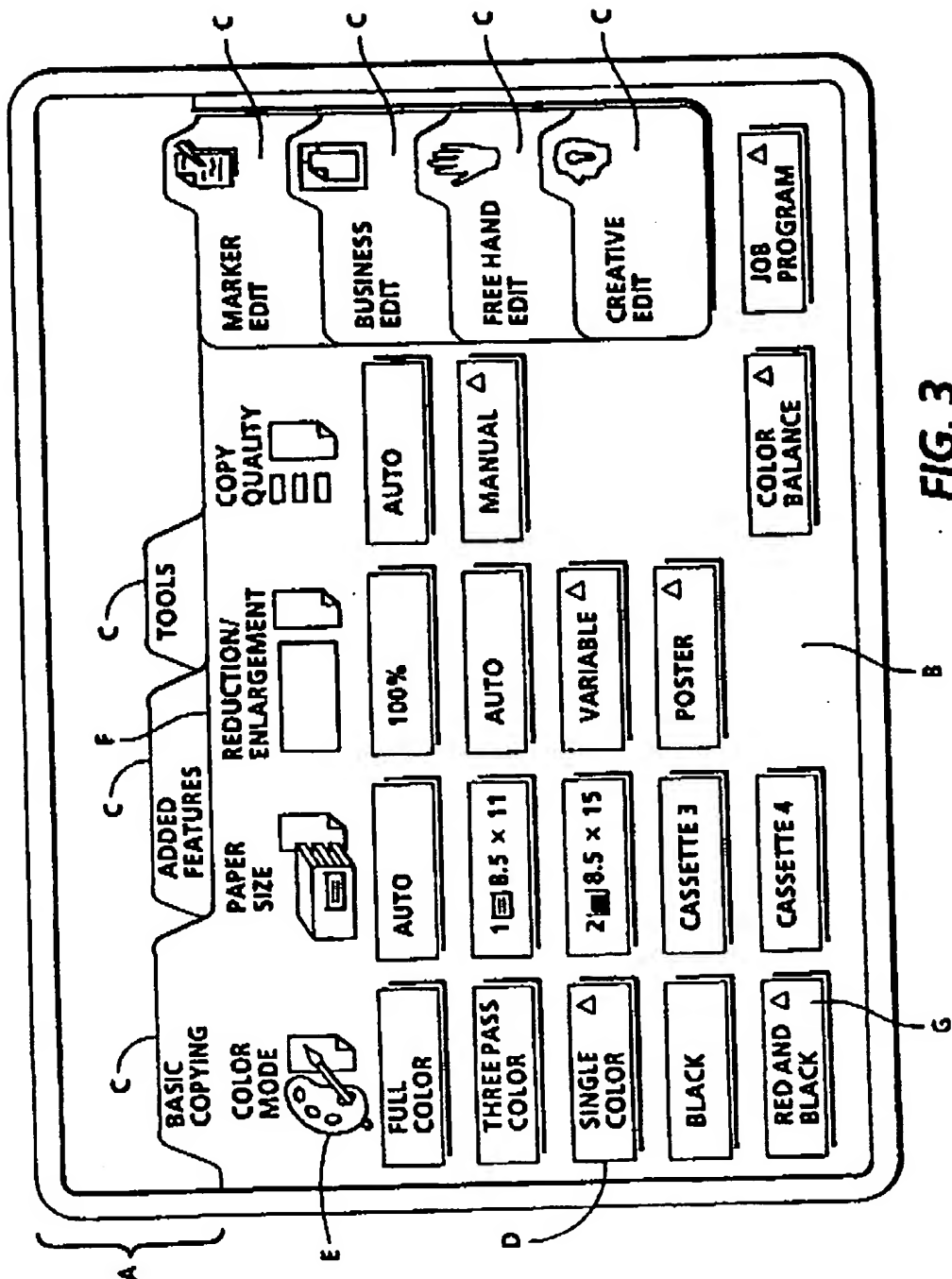


FIG. 3

EP 0 635 965 A1

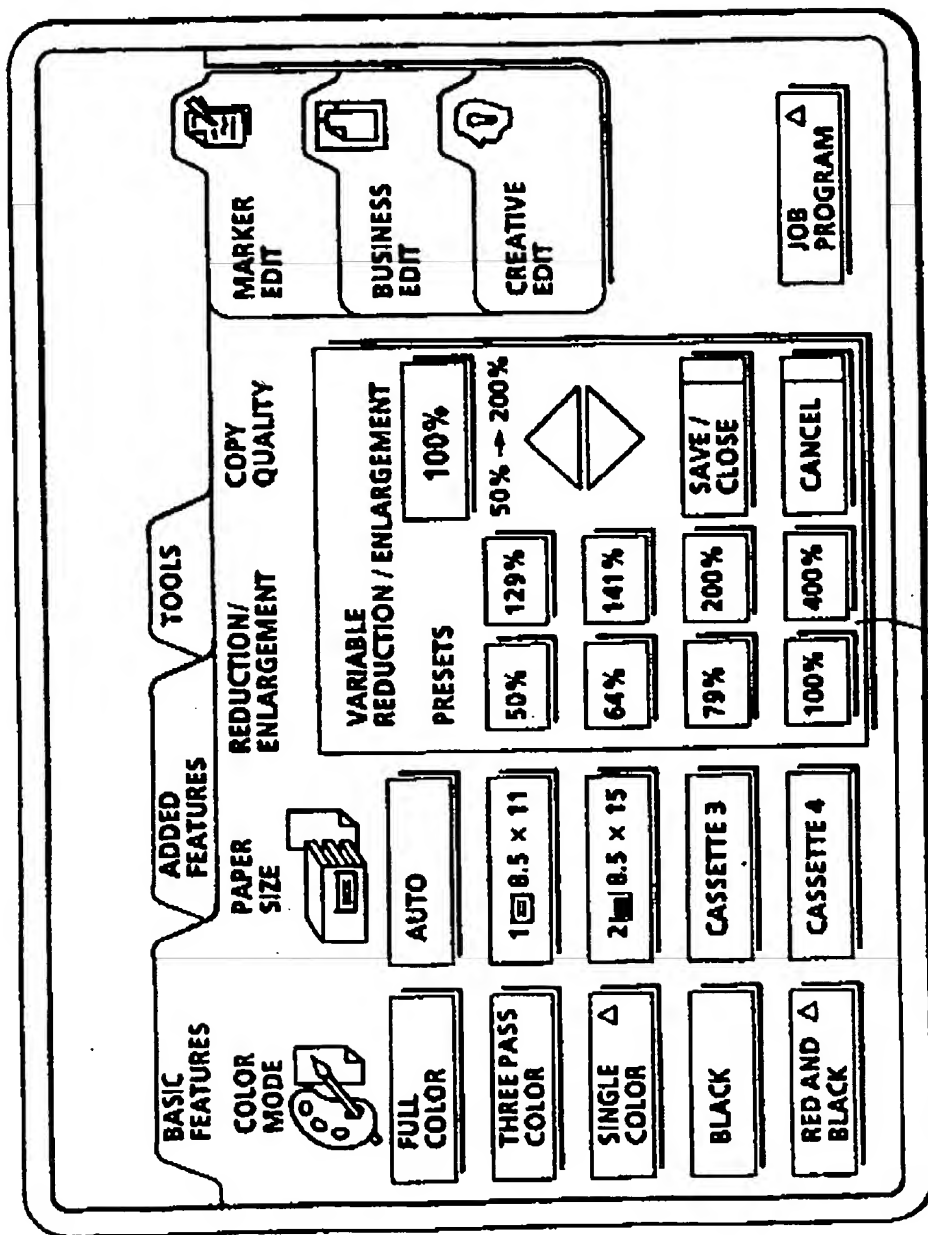
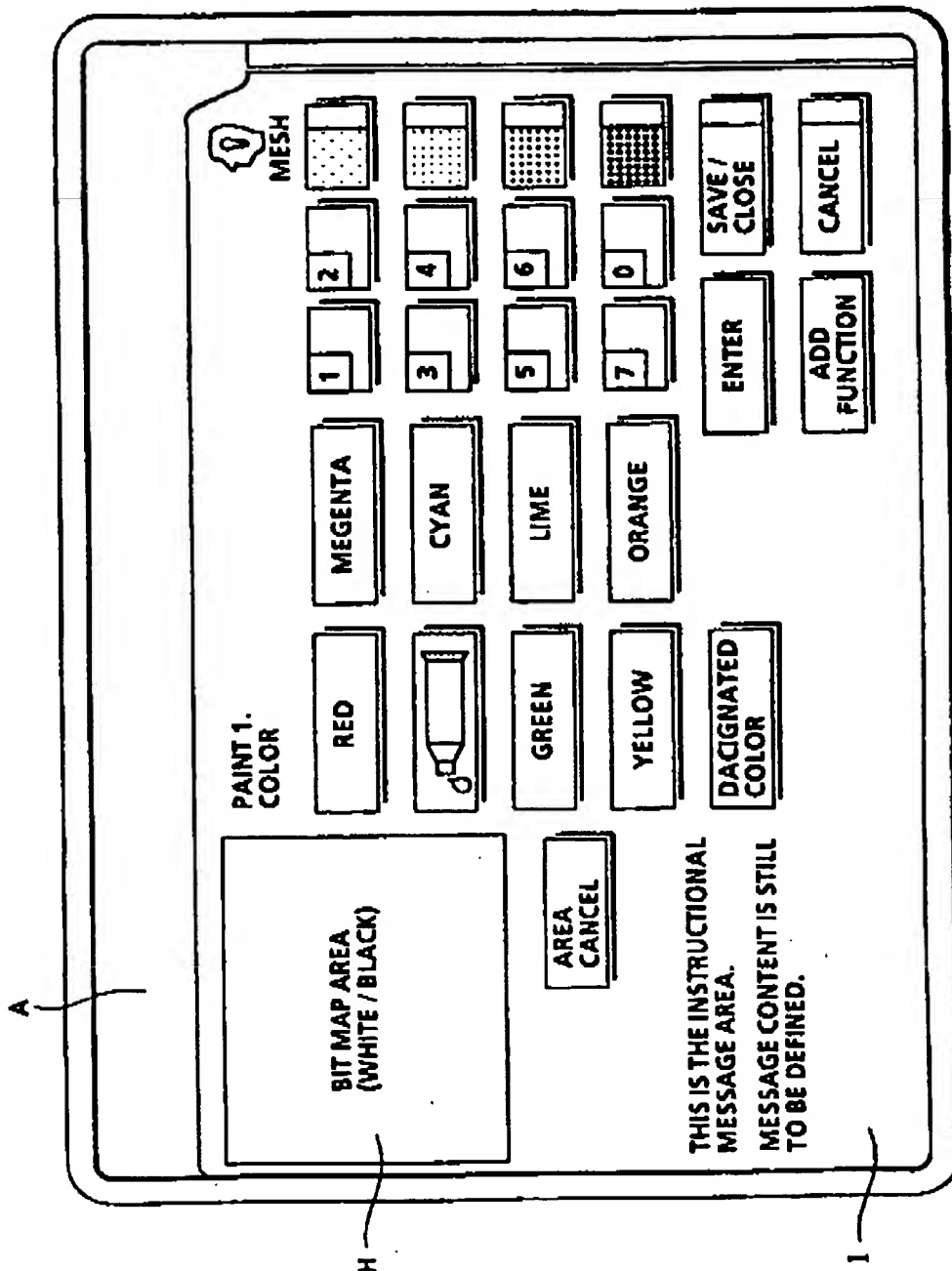


FIG. 4

EP 0 635 965 A1



EP 0 635 965 A1

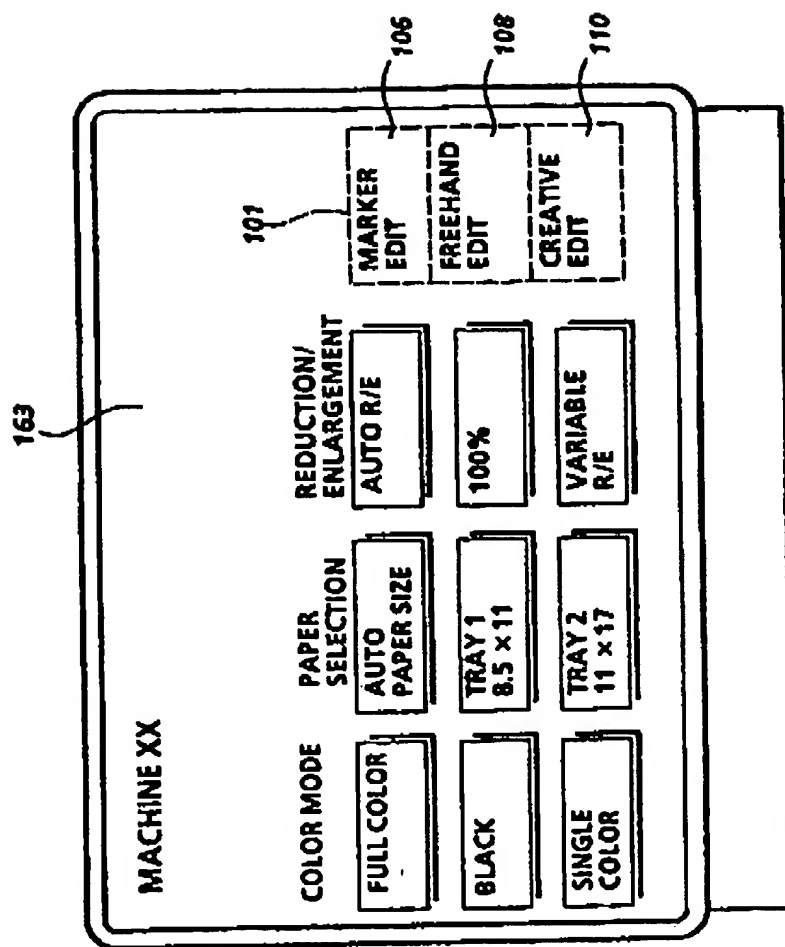


FIG. 6

EP 0 635 965 A1

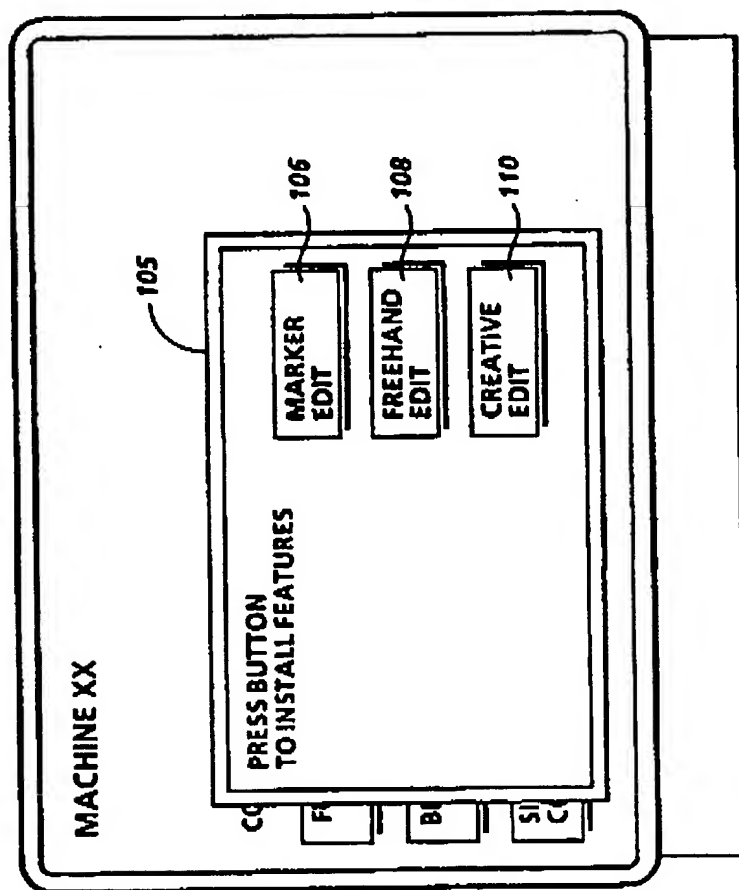


FIG. 7

EP 0 635 965 A1

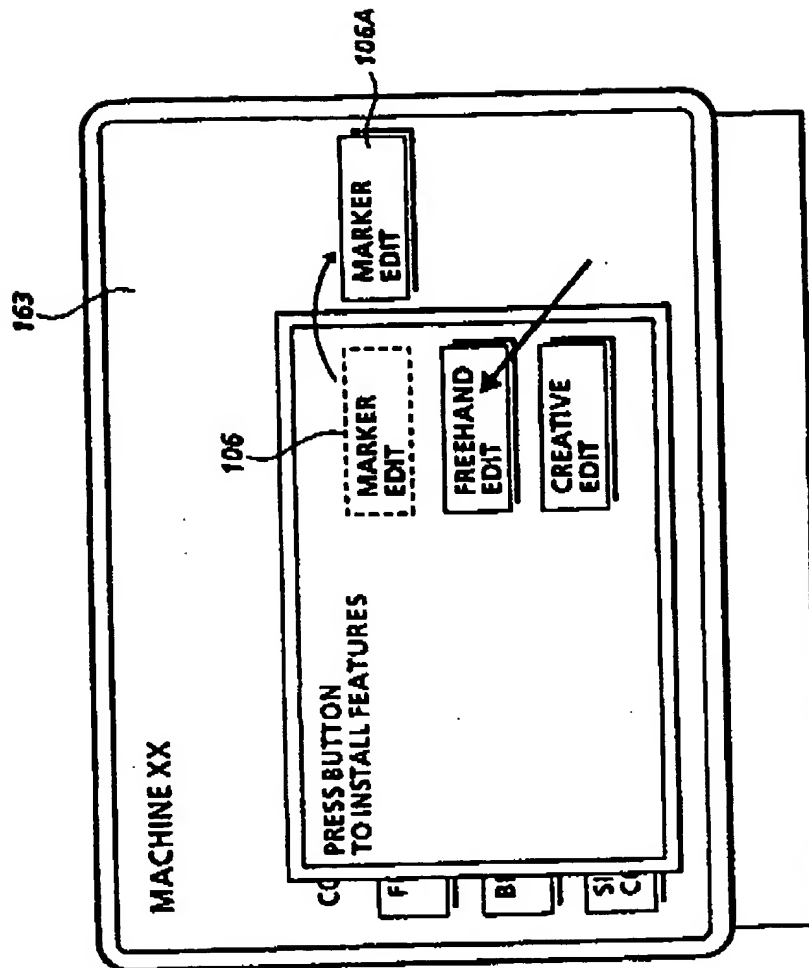
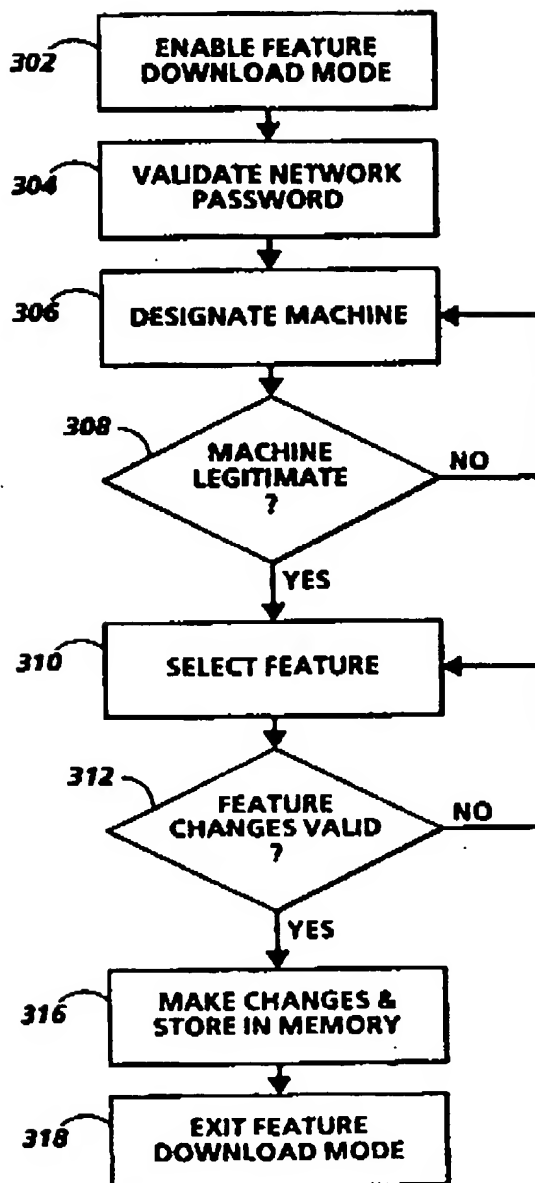


FIG. 8

EP 0 635 965 A1

FIG. 9

EP 0 635 965 A1

European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 94 30 5354

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	EP-A-0 509 530 (CANON KABUSHIKI KAISHA) * column 3, line 6 - line 57 * * column 8, line 11 - line 23 * * column 11, line 46 - column 12, line 11 *	1-4, 6-10	H04N1/00 G03G15/00
A	US-A-5 109 252 (SCHOTT, JR.) * column 6, line 56 - column 8, line 29 *	8, 10	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			H04N G03G
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 26 October 1994	Examiner Hazel, J
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, not published on, or after the filing date D : document cited in the application L : document cited for other reasons A : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure F : intermediate document			

EPO FORM 181 (REV. 01/90)

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

☐ BLACK BORDERS

☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES

☐ FADED TEXT OR DRAWING

☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING

☐ SKEWED/SLANTED IMAGES

☒ COLOR OR BLACK AND WHITE PHOTOGRAPHS

☐ GRAY SCALE DOCUMENTS

☐ LINES OR MARKS ON ORIGINAL DOCUMENT

☒ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY

☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.